MINUTES OF THE MEETING OF THE NORTH CENTRAL CORN BREEDING TECHNICAL COMMITTEE

1956

Reported by
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Field Crops Research Branch
Plant Industry Station
Beltsville, Maryland
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NORTH CENTRAL CORN BREEDING TECHNICAL COMMITTEE

Minutes of the meeting held in the LaSalle Hotel, Chicago, Illinois, March 6-7, 1956

AFTERNOON SESSION, MARCH 6, 1956

Chairman R. W. Jugenheimer called the meeting to order at 10:00 a. m. The following individuals were present at the various sessions of the committee meetings. Dean H. J. Reed attended the committee meetings as Administrative Advisor in the absence of Dr. N. J. Volk.

Roster of Attendance

Illinois

Beckett, Jack
Jugenheimer, R. W.

Indiana

Reed, H. J.
House, L. R.
Newman, J. E.
Crane, P. L.
Brunson, A. M.
Wiser, W. J.

Iowa

Russell, W. A.
Sprague, G. F.
Penny, L. H.
Dicke, F. F.

Kansas

Findley, Wm. R., Jr.

Kentucky

Loeffel, F. A.

Maryland

Jenkins, Merle T.

Michigan

Rossman, E. C.

Minnesota

Pinnell, E. L.
Rinke, E. H.

Missouri

Grogan, C. O.
Coe, E. H., Jr.,

Nebraska

Lonnquist, J. H.

Ohio

Stringfield, G. H.
Dollinger, E. J.

North Dakota

Wiidakas, Wm.

Wisconsin

Neal, N. P.
Strommen, A. M.

Tests of AES Hybrids and Candidates

Uniform tests of AES hybrids covering 7 different maturity groups were conducted in 1955. As in previous years the data from these tests were summarized by the chairmen of the respective maturity committees. Committee Chairmen presented and discussed the results of the 1955 tests and recommended action on the assignment of new AES designations.

Wm. Wiidakas reported on the tests of hybrids of 200 and 300 maturities. The data from these tests are reported in tables 1 and 2. Mr. Wiidakas reported that CB1210 has performed very well in the tests and is earlier than Wis.240.

It was MOVED by Mr. Wiidakas that CB1210 be assigned the regional designation AES 101.

Seconded by E. H. Rinke and passed.

This is the first hybrid in this maturity group to receive a regional designation.

It was MOVED by E. H. Rinke that NE26 be assigned the regional designation of AES 201.

Seconded by A. M. Strommend and passed.

E. C. Rossman reported on tests of the 400, 500 and 600 maturities. No double crosses of 400 maturity were tested in 1955 and those of 500 and 600 maturities were combined in the 1955 tests. Data on the tests of these hybrids are reported in tables 3, 4 and 5.

J. H. Lonnquist reported on the tests of double crosses of 700 and 800 maturities. The 1955 data on the individual tests of the 700 maturity hybrids are reported in table 6 and the 1954 and 1955 tests are summarized in table 7.

Data on the 1955 tests of 800 maturity are reported in table 8, the averages for 1954 and 1955 in table 9 and the three-year averages for 1953, 1954 and 1955 in table 10. Three hybrids, Oh4808, Ill. 1767 and Ill. 1813 have been tested for 3 years and since they have not been particularly outstanding it was decided to eliminate them from further tests.

It was MOVED by G. H. Stringfield that Indiana 2609 be assigned the regional designation AES 808.

Seconded by W. J. Wiser and passed.

Wm. R. Findley, Jr., reported on the tests of double crosses of 900 maturity. The data from these tests are summarized in table 11.

It was MOVED by Wm. R. Findley, Jr., that Mo801W be assigned the regional designation AES904W.

Seconded by C. O. Grogan and passed.

Table 1 .. 200 Maturity (Wis.240) Regional Uniform Double Cross Test 1955 and 1954 Average Score

Pedigree	Cross Hybrid No.	Yield, bushels per acre Wis.	N.D.	Mich.	Minn.	S.D.	% of W240 1955	1954	Moisture per cent Wis.	N.D.	Mich.	Minn.	S.D.	% of W240 1955	1954
WD x ND203 : V3 x W103	CB1210	64.9	46.3	45.9	65.5	34.8	102	95	24.4	23.9	14.7	22.3	9.9	82	82
	Wis240	72.8	43.6	41.8	68.8	27.1	100	100	30.7	30.3	17.7	26.9	10.7	100	100
	Wis255	76.6	45.1	44.2	70.6	32.7	106	101	32.4	31.7	16.6	24.9	12.3	101	99
ND230 x ND203 : A111 x A90	ND301	--	49.9	52.6	72.3	--	113	103	--	31.6	17.9	26.7	--	102	102
WD x ND255 : V3 x A116	Mordin77	72.8	45.4	--	69.2	33.8	104	94	29.6	30.8	--	22.5	10.1	94	89
W33 x A116 : A90 x ND203	NE26	78.6	47.4	50.9	74.8	36.7	113	103	30.2	34.6	16.7	24.7	11.8	102	103
ND52 x ND203 : W65 x A90	CB1326	82.0	51.4	61.1	--	42.3	128	111	31.0	33.9	18.7	--	15.2	111	108
W33 x ND203 : W79A x A90	CB1329	87.1	--	58.8	--	42.2	133	105	33.3	--	19.3	--	15.7	116	116
A495 x A509 : A502 x A556	M103	89.7	--	58.4	80.5	45.5	130	-	32.7	--	18.3	24.3	11.2	101	-
CMD5 x CMR5 : A498 x MS1334	N137	94.3	49.7	51.9	--	--	124	-	24.6	35.5	19.0	--	--	101	-
W65 x A90 : A116 x ND203	CB1352	--	52.5	55.1	--	--	126	100	--	33.1	18.7	--	--	108	102
	MS160	--	46.4	46.6	--	--	109	-	--	27.3	15.6	--	--	89	-
WD x ND203 : M13 x A90	ND306	--	50.1	46.8	--	--	113	-	--	31.2	17.6	--	--	102	-
Least Significant Difference		--	2.9	6.7	5.3	4.9	-	-	--	2.1	1.8	1.3	--	-	-

Hybrid Cross No.	Per Cent of Lodging N.D.	Lodging Mich.	Stalk Break N.D.	Stalk Break Mich.	Stalk Break Minn.	Shelling % Wis.	Shelling % N.D.	Rat. Score N.D. Pl.	Rat. Score N.D. Ear	Husking Qual.	Ave. Height inches Pl.	Ave. Height inches Ear
CB1210	10.1	10.2	3.2	6.4	9.6	84.2	82.4	2.3	3.0	m	84	21
Wis240	12.2	31.3	8.2	0.6	22.0	84.6	83.7	4.0	2.4	e	80	20
Wis255	4.1	23.5	6.2	4.9	9.3	86.1	85.6	2.0	3.0	me	84	26
ND301	2.1	13.0	4.2	3.3	10.8	--	82.4	1.2	2.3	m	84	26
Mor.77	8.1	--	8.2	-	19.4	85.2	83.7	2.3	2.4	me	83	23
NE26	1.6	9.6	4.6	5.3	4.2	83.0	81.3	1.2	2.4	mh	85	26
CB1326	6.3	8.3	5.1	1.9	--	78.0	81.1	2.1	1.3	m	86	24
CB1329	2.5	7.3	3.8	3.0	--	83.5	83.3	1.2	1.3	me	86	29
M103	2.2	8.4	6.1	3.7	9.9	81.7	80.1	1.2	2.1	me	80	26
N137	3.2	10.9	8.3	9.2	--	83.4	81.7	2.3	2.4	m	88	29
CB1352	4.2	12.4	3.2	3.5	--	--	82.0	1.2	1.2	mh	84	26
MS160	8.1	9.2	8.2	4.3	--	--	84.4	1.2	3.4	e	79	26
ND306	8.2	7.0	5.1	4.0	--	--	80.7	1.2	1.3	me	82	22

Table 2. 300 Maturity Series (Wis.355) Regional Uniform Double Cross Tests 1955 and 1954 Average Score.

Pedigree	Hybrid Cross No.	Yield, bushels per acre						Moisture per cent						Per Cent of Lodging		Per Cent of Stalk Break.		Shelling %		Rating Score			Husking Qual.	Ave. Height inches	
		Wis.	N.D.	Mich.	S.D.	% of W355 1955	% of W355 1954	Wis.	N.D.	Mich.	S.D.	% of W355 1955	% of W355 1954	N.D.	Mich.	N.D.	Mich.	Wis.	N.D.	N.D. Pl.	N.D. Ear	Wis.		Pl.	Ears
A498 x MS1334 : A508 x A509	N127	99.5	62.7	54.5	41.2	106	99	27.3	27.7	22.1	15.1	95	99	1.5	9.8	6.1	4.1	82.5	79.5	1	2	1-2	me	88	30
A498 x W703WC : A508 x MS1334	N119	99.1	59.2	55.2	37.9	104	106	27.2	26.6	19.4	13.3	89	99	2.4	15.3	6.2	5.5	85.9	83.0	1	1-3	1	m	87	28
CMR5 x MS1334 : W59M x A498	N131	99.6	57.3	57.7	43.2	106	100	29.0	29.0	21.6	18.8	101	104	3.2	7.4	4.1	5.9	83.4	81.2	1-2	1-3	1	e	90	28
A495 x A509 : A502 x A556	M103	77.8	58.7	58.4	45.5	99	-	24.9	26.0	18.3	11.2	83	-	2.2	8.4	6.1	3.7	83.0	80.1	1	2-1	-	me	80	26
CMD5 x A509 : A508 x MS1334	CB2368	96.4	56.3	60.2	41.5	105	94	26.4	24.8	18.2	12.9	85	97	3.2	10.8	6.3	0.0	81.2	79.8	1-2	2-3	1	me	84	28
CMD5 x MS1334 : A508 x A509	N103	96.6	54.8	56.7	--	103	99	27.0	27.0	20.3	--	92	96	2.4	9.1	6.2	1.0	80.6	80.7	1-2	2-3	-	me	80	26
SD26 x W59M : A509 x MS1334	CB2302	91.2	58.5	56.6	42.0	102	95	26.3	25.6	18.3	14.0	87	96	3.1	8.1	6.2	2.0	81.7	81.7	1-2	2-3	1-2	me	83	26
A498 x A509 : A508 x MS1334	N135	90.8	60.0	58.1	--	102	-	27.6	27.1	21.1	--	93	-	2.5	5.4	5.2	3.5	82.0	80.3	1-2	2-3	-	mh	86	30
CMR5 x A508 : A498 x MS1334	N139	91.5	59.8	58.8	--	103	-	28.7	29.6	21.7	--	99	-	2.5	11.4	4.8	10.5	82.7	80.9	1	1-3	-	e	88	30
CMD5 x A508 : A509 x MS1334	N136	90.8	57.4	61.0	--	102	-	25.8	26.0	19.6	--	88	-	2.8	9.2	8.5	5.4	82.3	79.6	2-1	2-1	-	m	86	29
W33 x ND203 : W79A x A90	CB1329	87.5	59.1	58.8	42.2	102	-	24.0	25.4	19.3	15.6	87	-	2.5	7.3	3.8	3.0	84.0	82.6	1-2	1-3	-	me	86	29
SD26 x B8 : SD48 x 5	Sokota220	93.0	54.5	58.9	42.0	102	-	23.7	27.6	18.4	14.5	87	-	2.5	8.9	3.5	7.0	85.4	82.6	1-2	1-3	1	m	82	29
CMR5 x MS1334 : W59M x A509	CB2359	93.8	52.8	60.4	40.3	102	91	26.9	26.2	20.4	13.3	89	99	3.2	6.3	4.8	1.9	81.4	79.5	1-2	2-3	-	m	84	27
CMD5 x A509 : W59M x A508	CB2353	92.7	49.9	57.9	41.6	100	94	27.9	27.4	19.7	14.7	92	99	8.1	6.0	2.0	1.9	81.8	81.4	1-2	2-3	2-3	me	82	27
W9 x W-M13 : W25 x 153	Wis355	92.7	50.8	61.4	38.0	100	100	29.4	31.1	20.6	16.2	100	100	3.1	6.0	2.0	0.0	83.0	80.8	1-2	3-2	-	m	89	32
SD25 x MS1334 : W59M x A509	CB2301	87.7	56.1	61.6	40.6	101	99	22.3	23.4	18.8	11.5	78	91	1.6	8.9	8.1	3.2	81.5	81.0	1-2	2-3	3	m	83	26
CMR5 x A509 : W59M x MS1334	CB2329	92.8	55.6	58.0	41.6	102	93	27.1	25.9	19.6	13.1	88	96	2.1	5.0	6.1	2.6	81.1	79.6	1-2	2-3	2-3	me	87	28
W33 x A90 : W79A x ND203	CB1338	83.5	55.8	55.5	43.1	98	90	23.3	25.8	19.9	14.5	86	87	3.2	7.6	4.0	4.3	83.1	82.8	1	2-3	-	m	88	30
CMR5 x A509 : A498 x MS1334	N121	90.2	55.3	56.8	40.4	100	97	24.4	24.1	18.0	11.3	80	90	5.6	11.8	5.1	5.1	83.2	81.9	2	1-3	2-3	mh	86	26
CMR5 x A509 : A508 x MS1334	N113	89.3	55.8	60.7	--	100	99	27.9	26.7	20.7	--	93	99	4.2	9.5	8.3	6.0	81.3	79.2	2-1	2-3	-	m	84	26
W59M x A509 : A508 x MS1334	CB2309	83.8	58.0	60.2	--	99	98	27.4	27.7	20.7	--	93	97	3.4	5.1	5.2	1.3	80.9	79.0	1	2-3	-	me	84	29
CMD5 x A509 : W59M x MS1334	CB2310	92.7	56.4	53.2	33.9	97	98	25.4	25.9	18.9	11.9	84	92	4.2	7.1	8.5	5.3	81.6	79.1	1-2	2-4	1	me	83	27
CMR5 x A508 : A498 x A509	N124	84.1	52.9	52.2	--	92	92	24.5	21.6	19.4	--	81	100	6.3	9.5	8.2	7.2	82.4	81.2	2	2-3	-	m	84	27
SD26 x A509 : W59M x MS1334	CB2303	86.5	55.1	59.1	38.2	98	101	27.3	23.6	19.0	15.0	87	92	2.4	9.7	4.6	0.6	81.9	82.6	1-2	2-3	-	m	82	26
W59M x A498 : A509 x A513	N122	85.0	53.8	50.3	--	92	95	23.3	23.1	18.6	--	80	90	2.2	5.4	5.2	2.3	81.7	81.1	1-2	2-3	-	e	84	26
A488 x A509 : A502 x A556	M102	89.2	53.0	--	--	99	-	22.2	21.2	--	--	80	-	3.2	--	5.5	--	80.4	78.4	2	3	-	e	85	27
CMD5 x W59M : A513 x MS1334	CB2380	86.1	53.3	53.9	--	94	95	27.0	26.2	20.4	--	91	95	5.2	7.5	6.4	5.2	82.1	80.0	2	3-2	-	m	85	29
W9 x W-M13 : WD x 49	Wis279	90.1	49.0	--	34.6	96	-	24.3	24.7	--	12.2	80	-	4.5	--	8.5	--	85.7	83.0	2	2-4	2	m	84	26
W59M x Mal39A : A498 x A509	N120	86.5	54.8	52.6	36.5	96	92	23.8	22.2	16.9	12.1	77	84	4.6	9.1	5.1	1.0	84.4	82.3	2	2-4	2-3	me	82	26
CMD5 x A508 : A498 x A509	N108	90.8	51.4	50.6	32.7	93	90	26.7	25.8	19.2	16.9	91	97	4.2	14.4	6.3	3.2	84.0	81.7	2-3	2-4	-	e	80	26
W59M x A509 : A498 x MS1334	CB2312	93.9	56.6	--	--	105	-	25.4	26.4	--	--	86	-	2.1	-	3.2	--	82.8	80.2	1-2	2-3	-	m	84	29
ND230 x ND203 : A111 x A90	Mich.250	--	55.5	63.3	--	106	-	--	28.1	17.3	--	87	-	0.5	9.4	0.5	0.0	--	82.1	1	2-3	-	m	94	34
	ND 301	--	53.1	52.6	--	94	84	--	22.7	17.9	--	79	83	2.1	13.0	4.2	3.3	--	82.4	1-2	2-3	-	me	81	25
Least Significant Difference		--	2.8	6.7	4.9	-	-	--	1.4	1.8	--	-	-												

Table 3. Average performance for AES hybrids and candidates, 500-600 maturity series. 1955.

Hybrid	Pedrigree	Bu. per acre	Moisture %	Stalk lodged %	Root lodged %	Dropped ears %	Ear height Score	Ear height In.	Days to Silk	Corn borer score	Smutted plants %
	Number of Tests	7	7	5	2	3	2	2	2	2	2
Ohio M15	(Oh51 x Oh26)(A x W23)	30.5	19.9	34.8	2.0	1.5	4.3	---	77.0	5.2	3.1
Ohio K24	(Oh51A x WF9)(Oh33 x Oh40B)	88.9	19.9	34.4	6.0	2.1	4.3	40.0	76.0	4.7	3.0
Ohio 5305	(A73 x Oh5) (Oh51A x Oh26A)	80.2	19.6	13.8	1.8	6.1	3.8	40.5	77.0	4.9	1.6
AES 510	(WF9 x W22)(M19 x B9)	85.0	18.7	29.5	2.2	4.9	3.8	41.5	77.0	4.2	8.7
AES 512	(WF9 x M14) (B9 x W22)	85.7	19.1	33.4	1.5	3.6	4.0	40.5	77.0	5.2	5.3
AES 610	(M14 x A73)(Oh43 x Oh51A)	78.6	21.3	36.0	0.0	1.8	3.5	37.0	77.0	4.6	1.8
Minn. 40	(Oh 51A x A286)(A73 x A401)	85.7	19.4	33.0	2.5	1.1	---	41.5	76.0	4.7	2.1
CB 8504	(Oh5 x Oh43)(W22 x M14)	82.6	19.4	34.9	1.4	1.7	3.5	37.5	77.5	3.6	3.3
Ill. 1300	(M14 x WF9) (A73 x A[illegible]5)	84.9	20.1	35.7	2.0	2.5	---	40.0	77.5	4.8	4.3
Average		83.6	19.7	31.3	2.2	2.8	3.9	39.8	77.0	4.7	3.7

Table 4. Average performance by states for hybrids and candidates, 500-600 maturity series. 1955.

Hybrid	Iowa	Wis.	Ill.	Ohio.	Minn.	S.D.	Mich.	Ind.	Mo.	Ave.	Ave.
										Ave. 9 tests	Ave. 7 tests
				BUSHELS PER ACRE							
Ohio M15	84.2	105.3	84	103	74.5	39.5	73	---	85.8	---	80.5
Ohio K24	88.4	110.2	94	109	82.1	54.6	84	120	99.4	93.5	88.9
Ohio 5305	73.3	107.0	70	106	79.1	45.8	80	100	89.7	83.4	80.2
AES 510	87.9	111.6	80	107	89.1	46.5	73	95	87.9	86.4	85.0
AES 512	88.0	117.8	85	108	82.4	49.6	69	100	89.6	87.7	85.7
AES 610	80.2	96.0	82	101	79.9	39.9	71	101	89.9	82.3	78.6
Minn.40	79.1	101.8	93	110	84.1	48.1	84	102	----	----	85.7
CB8504	83.8	99.2	77	107	88.1	44.8	78	102	85.0	85.0	82.6
Ill.1800	89.8	110.2	81	108	84.5	45.0	76	108	----	----	84.9
Average	83.8	106.6	83	107	82.6	46.0	76.4	103.5	89.1	86.4	83.6
L.S.D.	NS		9	13.7	8.4	7.6	6.1	8.0			
Iowa 4630	97.0										
				Moisture o/o						Ave. 9 tests	Ave. 7 tests
Ohio M15	14.0	16.6	23	25.0	20.6	17.4	23	---	18.3	----	19.9
Ohio K24	14.2	15.1	23	22.8	21.9	16.1	26	20.3	18.3	19.7	19.9
Ohio 5305	15.7	14.8	23	23.5	21.9	16.9	22	17.8	16.8	19.1	19.6
AES 510	13.8	15.1	21	22.4	19.7	16.6	22	18.3	17.6	18.5	18.7
AES 512	14.2	14.8	22	21.6	20.5	17.5	23	19.0	16.5	18.8	19.1
AES 610	16.0	17.2	23	23.2	21.8	20.8	27	20.2	17.9	20.8	21.3
Minn.40	15.0	14.2	23	23.6	19.9	16.9	23	19.0	----	----	19.4
CB8504	13.8	15.4	23	22.6	20.3	17.5	23	19.6	15.7	19.0	19.4
Ill.1800	14.9	15.4	24	24.5	21.1	17.0	24	18.9	----	----	20.1
Average	14.6	15.4	23	23.2	20.8	17.4	23.7	19.1	17.3	19.3	19.7
Iowa 4630	13.9										
				Stalk lodging o/o						Ave. 7 tests	Ave. 5 tests
Ohio M15	31.4	3.5 1/	59	44.3	12		27.3	---	39.8	----	34.8
Ohio K24	28.0	2.0	77	54.7	5		7.5	18	13.0	29.0	34.4
Ohio 5305	7.8	1.5	87	35.4	4		13.2	21	16.1	15.2	13.8
AES 510	16.2	1.5	88	28.7	4		10.7	9	6.0	23.2	29.5
AES 512	22.3	1.0	80	48.4	6		10.5	11	17.7	28.0	33.4
AES 610	27.2	1.5	80	56.3	7		9.5	8	16.9	29.3	36.0
Minn. 40	19.1	2.0	84	37.0	7		19.3	17	----	----	33.3
CB 8504	15.1	0.5	79	65.1	6		9.4	9	29.1	30.4	34.9
Ill. 1800	37.1	2.0	79	45.8	6		10.6	12	----	----	35.7
Average	22.7	1.7	79.2	46.2	6.3		13.1	11.7	19.8	25.9	31.8
Iowa 4630	15.9										
				Root Lodging o/o						Ave. 3 tests	Ave. 2 tests
Ohio M15	0.0				4				8.8	4.3	2.0
Ohio K24	8.9				3				0.0	4.0	6.0
Ohio 5305	2.6				1				9.3	4.3	1.8
AES 510	1.3				3				0.0	1.3	2.2
AES 512	0.0				3				8.8	3.9	1.5
AES 610	0.0				0				0	0	0
Minn.40	0				5				--	--	2.5
CB8504	0.7				2				7.7	3.5	1.4
Ill.1800	0				4				--	--	2.0
Average	1.5				2.8				4.9	3.6	2.2
Iowa 4630	0										

1/ = stalk lodging score

Table 4 (cont'd.)

Hybrid	Days to Silk Ohio	Minn.	Ave.	Dropped ears o/o Iowa	Ill.	Minn.	Ind.	Mo.	Ave.3
Ohio M15	76	78	77	0	4	0.5	---	1.8	1.5
Ohio K24	74	78	76	0	5	1.3	0	0	2.1
Oh5305	76	78	77	0.6	17	0.8	0	0	6.1
AES 510	75	79	77	1.3	10	3.4	1	3.4	4.9
AES 512	75	79	77	0.6	8	2.2	0	0	3.6
AES 610	76	78	77	0	4	1.3	0	0	1.8
Minn.40	73	79	76	0	2	1.3	1	-	1.1
CB8504	76	79	77.5	0	4	1.1	0	0	1.7
Ill.1800	75	80	77.5	0	7	0.5	0	--	2.5
Average	75	79	77	0.3	7	1.4	0.2	0.7	2.8
Iowa 4630				0					

Hybrid	Ear Height Iowa score	Ill. in.	Ind. in	Mo. score	Ave. 2	Ave. 2 in.	Corn borer score Iowa	Ohio	Ave.2
Ohio M15	4.0	45	--	4.5	4.3	---	7.5	2.8	5.2
Ohio K24	4.0	38	42	4.5	4.3	40.0	6.8	2.6	4.7
Oh 5305	3.5	42	39	4.0	3.8	40.5	7.0	2.8	4.9
AES 510	3.8	41	42	3.8	3.8	41.5	5.8	2.5	4.2
AES 512	4.0	41	40	4.0	4.0	40.5	7.5	2.8	5.2
AES 610	3.5	36	38	3.5	3.5	37.0	6.8	2.4	4.6
Minn.40	4.0	41	42	---	---	41.5	6.8	2.6	4.7
CB8504	3.5	35	40	3.5	3.5	37.5	5.3	1.9	3.6
Ill.1800	3.8	39	41	---	---	40.0	6.8	2.8	4.8
Average	3.8	40	41	4.0	3.9	39.8	6.7	2.6	4.7
Iowa 4630	4.0						7.0		

	Smutted Plants o/o Ohio	Minn.	Ave. 2
Ohio M15	3.1	3	3.1
Ohio K24	2.6	3	3.0
Oh 5305	3.1	0	1.6
AES 510	7.3	10	8.7
AES 512	2.6	8	5.3
AES 610	1.6	2	1.8
Minn.40	3.1	1	2.1
CB8504	2.6	4	3.3
Ill.1800	3.6	5	4.3
Average	3.3	4.0	3.7
Iowa 4630			

Table 5. Two and four year average for AES hybrids and candidates, 500-600 maturity series

Hybrid	Bushels per acre					Moisture %				
	1952-1953	1954	1955	4 yr. ave.	2 yr. ave.	1952-1953	1954	1955	4 yr. ave.	2 yr. ave.
No. of Tests	16	8	7	31	15	16	8	7	31	15
Ohio M 15	81.5	80.0	80.5	80.8	80.2	19.1	20.8	19.9	19.7	20.4
Ohio K 24	85.2	82.4	88.9	85.3	85.4	20.1	21.1	19.9	20.3	20.5
Ohio 5305	--	75.4	80.2	--	77.6	--	20.3	19.6	--	20.0
AES 510	88.4	84.5	85.0	86.6	84.7	18.9	20.4	18.7	19.2	19.6
AES 512	86.4	90.4	85.7	88.3	88.2	19.7	21.0	19.1	19.9	20.1
AES 610	85.1	80.8	78.6	82.5	79.8	20.7	22.3	21.3	21.2	21.8
Minn 40	--	85.2	85.7	--	85.4	--	19.7	19.4	--	19.6
CB 8504	--	--	82.6	--	--	--	--	19.4	--	--
Ill 1800	90.0	86.3	84.9	87.8	85.6	20.6	22.2	20.1	20.9	21.2

Hybrid	Stalk lodged %					Root lodged %				
	1952-1953	1954	1955	4 yr. ave.	2 yr. ave.	1952-1953	1954	1955	4 yr. ave.	2 yr. ave.
No. of Tests	13	6	5	24	11		3	2		5
Ohio M 15	8.3	14.7	34.8	15.4	23.8		13.2	2.2		8.7
Ohio K 24	3.3	5.6	34.4	13.2	16.7		4.8	6.0		4.8
Ohio 5305	--	7.0	13.8	--	10.1		6.0	1.8		4.3
AES 510	2.9	7.0	29.5	9.5	17.2		7.7	2.2		5.5
AES 512	4.5	5.9	33.4	10.9	18.4		6.7	1.5		4.6
AES 610	2.8	7.9	36.0	11.0	20.7		0	0		0
Minn 40	--	5.7	33.0	--	18.1		10.5	2.5		7.3
CB 8504	--	--	34.9	--	--		--	1.4		--
Ill 1800	4.6	7.0	35.7	18.7	20.0		1.2	2.0		1.5

Hybrid	Dropped Ears %					Days to silk				
	1952 1953	1954	1955	4 yr. ave.	2 yr. ave.	1952 1953	1954	1955	4 yr. ave.	2 yr. ave.
No. of Tests	8	2	3	13	5	5	1	2	8	3
Ohio M 15	1.5	3.6	1.5	1.8	2.3	72.4	77.0	77	74.1	77.0
Ohio K 24	1.3	2.7	2.1	1.7	2.3	73.5	80.5	76	75.0	77.5
Ohio 5305	--	2.6	6.1	--	4.7	--	77.5	77	--	77.1
AES 510	1.6	3.5	4.9	2.7	4.3	72.4	79.0	77	74.3	77.6
AES 512	0.5	3.0	3.6	1.6	3.4	72.0	78.5	77	74.0	77.5
AES 610	1.1	2.2	1.8	1.4	2.0	72.8	78.0	77	--	77.3
Minn 40	--	1.7	1.1	--	1.3	--	78.0	76	74.2	76.7
CB 8504	--		1.7	--	--	--	--	77.5	--	--
Ill 1800	0.5	3.1	2.5	1.4	2.7	73.3	78.0	77.5	74.9	77.6

Hybrid	Corn borer score					Smutted plants %				
	1952 1953	1954	1955	4 yr. ave.	2 yr. ave.	1952 1953	1954	1955	4 yr. ave.	2 yr. ave.
No. of Tests	2	1	2	5	3	5	2	2	9	4
Ohio M 15	3.3	4.3	5.2	4.3	4.9	3.3	2.0	3.1	3.0	2.6
Ohio K 24	3.3	3.7	4.7	3.9	4.4	4.7	4.0	3.0	4.2	3.5
Ohio 5305	--	3.8	4.9	--	4.5	--	2.5	1.6	--	2.1
AES 510	3.0	4.0	4.2	3.7	4.1	6.7	4.0	8.7	6.5	6.4
AES 512	4.0	4.2	5.2	4.5	4.9	2.6	2.5	5.3	3.2	4.9
AES 610	3.9	4.3	4.6	4.3	4.5	1.9	0.5	1.8	1.6	1.2
Minn 40	--	3.8	4.7	--	4.4	--	1.0	2.1	--	1.5
CB 8504	--	--	3.6	--	--	--	--	3.3	--	--
Ill 1800	3.5	4.5	4.8	4.2	4.7	3.3	4.0	4.3	3.7	4.2

Table 6. A.E.S. Hybrids and Candidates, 700 Series - 1955.

Hybrid & state	Stand	Yield	H_2O	Days to silk	Lodging Root	Lodging Stalk	Ear node height	Dropped ears	Smutted plants	Borer
	Pct.	Bu.	Pct.	No.	Pct.	Pct.	In.	Pct.	Pct.	Score
Ia.4297 (Ia.)	91.2	71.9	15.0	--	87.7	4.1	32	2.7	--	8.3
(Mo.)	90.0	97.1	18.7	--	4.6	8.3	48	0	--	---
(Ind.)	----	81.0	16.9	--	0.0	18.0	45	1.0	--	---
(Ill.)	96.0	54.0	24.0	--	0.0	7.0	31	3.0	--	---
(Nebr.)	96.0	79.8	10.7	--	----	21.0	--	10.1	--	---
(Ohio)	----	107.0	27.8	77	----	42.7	--	---	3.1	---
	93.3	81.8	18.9	77	23.1	16.8	39.0	3.4	3.1	8.3
A.E.S.702(Ia)	96.2	61.6	15.8	--	48.1	9.1	46	15.6	---	6.3
(Mo)	95.0	99.6	17.6	--	4.4	9.6	58	1.8	---	---
(Ind)	----	87.0	15.6	--	1.0	15.0	49	1.0	---	---
(Ill)	95.0	57.0	24.0	--	0.0	3.0	34	5.0	---	---
(Nebr)	99.0	78.1	10.4	--	----	32.0	--	28.0	---	---
(Ohio)	----	134.0	26.1	80	----	22.4	--	----	1.0	---
	96.3	86.2	18.2	80	13.4	15.2	46.8	10.3	1.0	6.3
Ill.1575(Ia)	97.2	67.2	17.7	--	83.6	6.8	36	4.1	---	6.8
(Mo)	84.0	97.4	20.0	--	20.8	5.0	52	0.0	---	---
(Ind)	----	102.0	16.3	--	2.0	9.0	49	1.0	---	---
(Ill)	98.0	57.0	27.0	--	0.0	8.0	30	5.0	---	---
(Nebr)	97.0	69.7	10.8	--	----	25.0	--	7.1	---	---
(Ohio)	----	112.0	29.8	81	----	27.6	--	---	2.6	---
	92.6	84.2	20.3	81	26.6	13.7	41.8	3.4	2.6	6.8
Ill.1814 (Ia)	93.8	71.8	18.5	--	89.3	5.3	38	4.0	---	5.8
(Mo)	93.0	102.1	20.0	--	0.0	3.6	52	0.0	---	---
(Ind)	----	88.0	16.1	--	1.0	13.0	47	1.0	---	---
(Ill)	94.0	62.0	26.0	--	0.0	1.0	31	1.0	---	---
(Nebr)	99.0	78.6	10.9	--	----	17.0	--	7.0	---	---
(Ohio)	----	128.0	28.3	78	----	15.1	--	---	0	---
	95.0	88.4	20.0	78	22.6	9.2	42.0	2.6	0	5.8
Ill.1831(Ia)	91.2	72.2	19.0	--	36.3	14.4	38	8.9	---	6.3
(Mo)	91.0	96.6	16.8	--	0.9	15.6	52	0.0	---	---
(Ind)	----	99.0	15.9	--	0.0	10.0	51	2.0	---	---
(Ill)	97.0	63.0	26.0	--	0.0	4.0	28	1.0	---	---
(Nebr)	99.0	64.4	11.0	--	----	24.0	--	5.6	---	---
(Ohio)	----	121.0	30.4	76	----	26.1	--	---	7.3	---
	94.6	86.1	19.8	76	9.3	15.7	42.2	3.5	7.3	6.3
Ill.1863(Ia)	92.5	67.5	16.1	--	68.9	10.8	38	4.1	---	7.0
(Mo)	85.0	90.8	18.1	--	1.0	6.9	52	2.9	---	---
(Ind)	----	93.0	15.6	--	0.0	10.0	46	0.0	---	---
(Ill)	92.0	64.0	25.0	--	0.0	2.0	20	2.0	---	---
(Nebr)	98.0	70.2	10.6	--	----	11.0	--	7.1	---	---
(Ohio)	----	130.0	26.6	76	----	24.0	--	---	0	---
	91.9	85.9	18.7	76	17.5	10.8	41.0	3.2	0	7.0

Table 6. (Cont'd.)

700 Series - 1955.

Hybrid & state	Stand	Yield	H_2O	Days to silk	Lodging Root	Lodging Stalk	Ear node height	Dropped ears	Smutted plants	Borer
	Pct.	Bu.	Pct.	No.	Pct.	Pct.	In.	Pct.	Pct.	Score
Ill.1873(Ia)	93.1	75.4	15.3	--	21.5	4.0	36	4.0	---	6.5
(Mo)	98.0	91.4	18.3	--	0.0	5.1	46	1.7	---	---
(Ind)	----	80.0	15.5	--	0.0	10.0	46	2.0	---	---
(Ill)	96.0	57.0	24.0	--	0.0	2.0	27	2.0	---	---
(Nebr)	99.0	70.1	10.6	--	----	14.0	--	4.9	---	---
(Ohio)	----	121.0	26.4	76	----	27.6	--	---	0.5	---
	96.5	82.3	18.4	76	5.4	10.4	38.8	2.9	0.5	6.5
Ind.4656(Ia)	93.1	80.3	17.7	--	3.4	14.8	41	6.7	---	5.3
(Mo)	90.0	103.5	20.5	--	0.9	16.7	54	0.0	---	---
(Ind)	----	104.0	16.7	--	0.0	9.0	50	2.0	---	---
(Ill)	98.0	68.0	24.0	--	0.0	6.0	29	1.0	---	---
(Nebr)	97.0	70.6	11.0	--	----	23.0	--	4.3	---	---
(Ohio)	----	138.0	28.7	79	----	34.4	--	---	3.1	---
	94.5	94.1	19.8	79	1.1	17.5	43.5	2.8	3.1	5.3
Oh.3247(Ia)	86.2	71.6	14.4	--	12.3	13.0	36	0.7	---	4.0
(Mo)	90.0	79.4	17.3	--	0.0	7.4	40	0.0	---	---
(Ind)	----	83.0	14.5	--	0.0	13.0	42	0.0	---	---
(Ill)	97.0	61.0	21.0	--	0.0	4.0	27	5.0	---	---
(Nebr)	99.0	70.2	10.3	--	----	15.0	--	0.7	---	---
	93.0	73.0	15.5	--	3.1	10.5	36.2	1.3	---	4.0
Adj. Mean Oh3247		80.0	17.6			13.2				
Mean	94.2	84.9	18.9	77.9	13.5	13.3	41.2	3.7	2.2	6.3

Pedigrees

Ia.4297 (WF9 x I205) (M14 x 187-2)
A.E.S.702 (WF9 x Hy2) (M14 x C103)
Ill.1575 (WF9 x M14) (L12 x Oh28)
Ill.1814 (WF9 x Hy2) (M14 x Oh45)
Ill.1831 (WF9 x W146) (K237 x Oh45)
Ill.1863 (WF9 x M14) (I205 x Oh43)
Ill.1873 (M14 x C103) (R75 x Oh43)
Ind.4656 (WF9 x P8) (Oh43 x H14)
Oh.3247 (Oh51A x W22) (Oh43 x Oh45)

Table 7. A.E.S. Hybrids and Candidates. Two-year averages.
700 series - 1954-55

Hybrid	Stand	Yield	H_2O	Days to silk	Lodging Root	Lodging Stalk	Ear node height	Dropped ears	Smutted plants	Blight H.t.	Blight H.m.	Borer
	Pct.	Bu.	Pct.	No.	Pct.	Pct.	In.	Pct.	Pct.	Score	Score	Score
Ia.4297	86.8	90.1	21.9	73.5	2.5	8.8	40.0	4.1	5.0	4.0	1.5	4.6
	93.3	81.8	18.9	77.0	23.1	16.8	39.0	3.4	3.1	---	---	8.3
	90.0	86.0	20.4	75.2	12.8	12.8	39.5	3.8	4.0	4.0	1.5	6.4
A.E.S.702	86.8	105.6	21.4	75.5	0.0	5.8	41.0	3.1	2.0	2.5	0.5	4.6
	96.3	86.2	18.2	80.0	13.4	15.2	46.8	10.3	1.0	---	---	6.3
	91.6	95.9	15.8	77.8	6.7	10.5	43.9	6.7	1.5	2.5	0.5	5.4
Ohio 3247	91.3	97.5	20.8	71.5	1.2	8.0	38.5	2.3	2.0	4.0	0.5	3.1
	93.0				3.1		36.2	1.3		---	---	4.0
	92.2				2.2		37.4	1.8		4.0	0.5	3.6
Ill.1573	90.0	100.6	21.6	74.0	1.2	4.6	37.8	3.5	2.0	2.5	0.8	4.1
	96.5	82.3	18.4	76.0	5.4	10.4	38.8	2.9	0.5	---	---	6.5
	93.2	91.4	20.0	75.0	3.3	7.5	38.3	3.2	1.2	2.5	0.8	5.3
Ill.1631	87.4	102.1	22.6	73.2	0.5	10.0	40.0	2.9	2.0	4.0	0.8	4.0
	94.6	86.1	19.8	76.0	9.3	15.7	42.2	3.5	7.3	---	---	6.3
	91.0	94.1	21.2	74.0	4.9	12.8	41.1	3.2	4.6	4.0	0.8	5.2
Ill.1014	84.8	107.8	23.2	74.8	1.5	8.5	40.5	2.6	0.0	3.0	0.8	3.6
	95.0	88.4	20.0	78.0	22.6	9.2	42.0	2.6	0.0	---	---	5.8
	89.9	98.1	21.6	76.4	12.0	8.8	41.2	2.6	0.0	3.0	0.8	4.7
Mean	91.3	93.5	20.6	75.4	7.0	10.3	40.2	3.5	2.3	3.3	8.2	5.1

Table 8.

A.E.S. Hybrids and Candidates
800 Series - 1935

Hybrid	1 Stand	2 Yield	3 Crop harv.	2 Moisture	4 Days to silk	5 Plants standing Sept. 15	6 Lodging Root	7 Lodging Stalk	8 Ear node height	7 Dropped ears	9 Borer Score
	%	Bu.	%	%	No.		%	%	In.	%	
U.S.13	93.8	78.7	65	16.2	74	16	15.5	16.3	49.7	7.6	5.8
A.E.S.801	95.6	76.6	55	16.1	74	29	9.5	7.6	45.0	3.0	8.0
A.E.S.802	95.3	79.3	70	15.7	70.5	41	11.5	14.8	44.0	5.5	6.8
A.E.S.803	93.9	80.4	58	16.0	71.5	42	15.4	9.6	45.7	3.2	7.5
A.E.S.805	95.6	75.2	74	16.9	72.5	39	10.4	8.8	46.7	4.2	5.0
A.E.S.806	96.9	81.9	55	16.8	71.5	14	16.9	15.0	44.7	4.9	7.0
Ill.1767	97.2	77.8	52	16.1	72.5	7	12.5	13.1	43.3	4.4	6.0
Ill.1813	96.4	79.9	73	16.6	70.5	57	13.5	8.6	45.7	5.1	6.0
AES 808	95.6	78.4	59	15.3	71.5	29	13.1	14.4	42.3	4.2	5.3
Oh4808	96.9	79.3	62	16.1	72	37	19.5	13.8	44.7	2.7	4.8
Means.....	95.7	78.7	62.3	16.2	72.0	31.1	13.8	12.2	45.2	4.5	6.2

1. Iowa, Mo., Ill., Nebr., Kans.
2. Iowa, Mo., Ind., Ill., Nebr., Kans., Ohio.
3. Ohio (Ears on ground not harvested)
4. Kans., Ohio
5. Ohio
6. Iowa, Mo., Ind., Ill., Kans.
7. Iowa, Mo., Ind., Ill., Nebr., Kans.
8. Iowa, Mo., Ill.
9. Iowa.

Pedigrees

U.S.13 (WF9 x 38-11) (Hy x L317)
A.E.S.801 (WF9 x B7) (B14 x B10)
A.E.S.802 (WF9 x Hy2) (M6 x 38-11)
A.E.S.803 (WF9 x 187-2) (M6 x K148)
A.E.S.805 (WF9 x 38-11) (C103 x Oh45)
A.E.S.806 (WF9 x Hy) (M6 x M15)
Ill.1767 (WF9 x 38-11) (Hy2 x Oh45)
Ill.1813 (WF9 x Hy) (C103 x Oh45)
AES 808 (WF9 x 38-11) (Oh43 x M14)
Oh4808 (Oh40 x Oh51A) (Oh28 x Oh45)

Table 9.

A.E.S. Hybrids and Candidates
800 Series - 2-year average, 1954-1955

Hybrid	Stand	Yield	Moisture	Days to silk	Lodging Root	Lodging Stalk	Ear node height	Dropped ears	Smutted plants 1/	Blight Ht. 1/	Blight Hm. 1/	Borer
	%	Bu.	%	No.	%	%	In.	%	%	Score	Score	Score
U.S.13	87.4	73.9	16.5	71.6	12.2	15.4	45.1	8.3	5.2	4.0	2.0	4.9
A.E.S.801	89.0	71.4	16.4	71.8	6.2	5.6	40.5	3.0	4.5	4.0	3.0	6.3
A.E.S.802	88.0	71.0	16.5	69.6	9.0	9.1	41.0	5.6	16.4	4.0	0.5	5.4
A.E.S.803	87.1	69.3	16.6	70.4	15.0	7.6	41.4	3.4	20.8	3.0	0.5	5.9
A.E.S.805	90.1	63.0	17.0	70.5	11.0	5.7	41.6	2.9	17.7	3.0	0.5	4.3
A.E.S.806	90.1	76.4	17.7	68.5	12.0	10.9	41.0	5.2	6.3	3.0	2.5	5.6
Ohio4808	91.8	70.2	16.6	70.1	15.6	11.2	40.8	1.6	10.1	2.5	0.8	4.0
Ill.1767	89.8	68.2	16.6	69.8	9.0	9.2	41.4	4.8	18.9	3.0	2.0	4.8
Ill.1813	92.3	68.4	17.2	69.6	11.8	6.3	41.9	3.8	10.6	2.5	0.8	4.6
AES 808	93.8	74.1	15.8	70.0	8.0	12.9	40.0	4.6	6.3	4.0	0.8	4.4
Means. . .	89.9	70.6	16.7	70.2	11.0	9.4	41.5	4.3	11.7	3.3	1.3	5.0

1/ 1954 data only.

Table 10.

A.E.S. Hybrids and Candidates
800 Series - 3-year average, 1953-1954-1955

Hybrid	Stand	Yield	Moisture	Days to silk	Lodging: Root	Lodging: Stalk	Ear node height	Dropped ears	Smutted plants	Blight: Nt.1/	Blight: Sm.1/	Borer2/
	%	Bu.	%	No.	%	%	In.	%	%	Score	Score	Score
U.S.13	88.7	73.6	15.4	71.0	9.2	12.8	44.8	7.3	3.7	3.0	2.2	4.9
A.E.S.801	90.1	72.7	15.5	71.0	4.0	4.1	39.7	2.3	2.2	2.8	2.8	6.3
A.E.S.802	89.6	73.0	15.2	68.8	6.5	7.9	40.9	4.4	8.2	2.8	1.0	5.4
A.E.S.803	88.6	70.1	15.6	69.5	10.5	6.2	40.3	2.9	13.0	2.5	1.0	5.9
A.E.S.805	90.4	67.9	16.2	69.8	7.5	4.8	40.9	2.7	9.7	1.9	0.6	4.3
Ohio4808	92.4	70.4	15.8	68.9	11.2	9.4	40.0	1.6	5.5	1.5	0.8	4.0
Ill.1767	91.2	70.2	16.1	68.8	6.3	7.6	41.3	4.0	10.5	2.8	1.8	4.8
Ill.1813	92.0	70.5	16.5	68.8	8.2	5.2	41.6	3.0	6.0	1.5	0.8	4.6
Means. . .	90.4	71.0	15.8	69.6	8.0	7.2	41.2	3.6	3.7	1.2	0.7	2.5

1/ 1953-54 data only.

2/ 1954-55 data only.

Table 11

Series 900. Summarized performance of A. E. S. hybrids and candidates. 1955 results.

Hybrid	1/ Acre Yield Bu.	2/ Stand Pct.	1/ Moisture at Harvest Pct.	3/ Plants Root Lodged Pct.	3/ Broken Plants Pct.	3/ Ear Height In.	2/ Dropped Ears Pct.	4/ Corn Borer Damage Score	5/ H. Turcicum Score	5/ H. Maydis Score	6/ Leaf Firing Score	6/ Shelling Pct.	7/ Ear Worm Score	8/ Harvested Ears/100 Plants
Ill.1850	80.0	99	18.7	4	8	50	1.3	8	1.5	0	2.0	79	4.1	93.8
Ill.1852	74.4	97	17.6	1	8	48	.4	7	3.0	.8	1.8	77	4.4	97.0
[illegible]	81.7	99	19.3	2	9	49	.7	7	3.0	.5	1.0	77	3.6	144.3
Mo804(Type)	67.8	95	17.9	3	16	53	.5	6	4.0	.5	1.0	77	4.2	102.6
AES903W	77.6	99	17.6	7	6	46	1.0	6	3.0	2.5	2.2	74	4.4	97.7
U.S.523W	79.6	98	18.2	1	8	52	.8	8	-	-	-	-	-	-

1/ Illinois, Kansas, Missouri and Ohio
2/ Illinois, Kansas and Missouri
3/ Kansas and Missouri
4/ Iowa
5/ Maryland - 1954 data
6/ Illinois - 1954 data
7/ Kansas - 1954 data
8/ Ohio - 1954 data

Pedigrees

Ill.1850 (C103 x CI.21E)(38-11 x K201)
Ill.1852 (C103 x CI.21E)(38-11 x Oh07)
Mo810W (K64 x Mo22)(T111 x T115)
Mo804 (CI.7 x K4)(38-11 x CI.21E)
AES903W (H28 x K55)(H30 x K41)
U.S.523W (K55 x K64)(Ky27 x Ky49)

Two Year Average, 1954-1955:

Hybrid	Acre Yield Bu.	Stand Pct.	Moisture at Harvest Pct.	Root Lodged Pct.	Broken Plants Pct.	Ear Height In.	Dropped Ears Pct.	Corn Borer Damage Score
Ill.1850	56.2	90	17.7	6	9	41	1.6	5.8
Ill.1852	56.6	93	16.5	4	11	40	.2	5.3
[illegible]	70.4	99	18.3	3	13	40	1.5	5.5
Mo804(Type)	52.9	91	16.9	5	17	42	1.8	5.2
AES903W	61.4	95	17.6	7	9	36	1.8	5.2

Summary of AES Designations

Fifteen AES designations now have been assigned by the North Central Corn Breeding Technical Committee. These designations together with the experimental number, pedigree and year in which the designations were assigned are listed in table 12.

Table 12. List of AES designations and pedigrees.

Hybrid	Experimental number	Pedigree	Year Approved
AES 101	CB1210	(WD x ND203)x(V3 x W103)	1956
AES 201	NE26	(W33 x A116)x(A90 x ND203)	1956
AES 510	Ind.0412	(WF9 x W22)x(H19 x B9)	1954
AES 512	Ind.0421	(WF9 x M14) x (B9 x W22)	1955
AES 610	CB8503	(M14 x A73)x(Oh43 x Oh51A)	1952
AES 702	Ill.1790	(WF9 x Hy2)x(M14 x C103)	1952
AES 801	Ia.4527	(WF9 x B7) x(B10 x B14)	1951
AES 802	Neb. 893B	(WF9 x Hy) x (N6 x 38-11)	1951
AES 803	Neb. 1219B	(WF9 x 187-2) x(N6 x K148)	1951
AES 805	Ill. 1770	(WF9 x 38-11)x(C103 x Oh45)	1952
AES 806	Neb. 1617B	(WF9 x Hy) x(N6 x N15)	1954
AES 806W	Ind. 9502	(H26 x H27) x (H28 x H29)	1955
AES 808	Ind. 2609	(WF9 x 38-11)x(Oh43 x H14)	1956
AES 903W	Mo.4042	(H28 x K55) x (H30 x K41)	1954
AES 904W	Mo. 801W	(K64 x Mo22) x(T111 x T115)	1956

Deadline for 1956 Tests

The following deadlines were established for the 1956 uniform tests of double crosses:- on receiving seed, April 1; on receiving data from uniform tests, January 1.

Report of the Sub-Committee on the Preservation of Germ Plasm

The preservation of germ plasm of inbred lines and open-pollinated varieties is currently in a satisfactory condition as attested by recent reports of this committee under the leadership of D. B. Shank. Further surveys during the next 2 or 3 years would seem unprofitable.

Attention is called to "Collections of Original Strains of Corn I and II", 1954 and 1955, by the "Committee on Preservation of Indigenous Strains of Maize", Division of Biology and Agriculture, Agricultural Board of the National Research Council, National Academy of Sciences, Washington, D. C.

E. H. Rinke
D. B. Shank
G. H. Stringfield, Chairman

J. H. Lonnquist reported that he had seen some of the above collections in Columbia, Mexico, Brazil and Peru. An extremely large number of samples have been collected. He thought there were too many for all of them to be kept individually in a viable condition. He felt the collections needed to be evaluated and the number reduced for ease in maintaining. The difficulties of storage, classification and maintenance of the collection were discussed.

M. T. Jenkins mentioned that the European Corn Improvement Conference was initiating a program designed to collect the important European varieties and maintain germ plasm in a viable condition.

Report of the Sub-committee on Grouping of Inbred Lines for Breeding Purposes

G. H. Stringfield indicated that the committee had no formal report to present at this time.

Report of the Sub-committee on Cytoplasmic Male Sterility

The Chairman of this committee has exchanged considerable correspondence with Dr. D. F. Jones of the Northeastern conference and Dr. C. F. Genter of the Southern conference on this subject. It also has been discussed with a number of corn geneticists, including Dr. E. G. Anderson, Dr. M. M. Rhoades, and Dr. R. A. Brink. The following observations result from these discussions:

1. There seems to be general agreement that the designation "Rf" ("restorer of fertility") should be applied to pollen-restoring factors. There is also general agreement that subscript numbers should be used to distinguish between the various restoring genes. Thus, Rf_1, Rf_2, etc. would represent different genes for fertility restoration.

2. As a temporary measure, until the different fertility-restoring genes are classified and numbered, it appears best to designate the source of restoration by using the name of the inbred from which it hasbeen derived. For example, "Rf (Ky21)" or "Rf (I153)" might be used.

3. There still seems to be no definite agreement asto one best system for permanently designating the cytoplasmic source involved. More workers favor "cms" than any other designation. However, "cs", "Cyt (st)", and the use of Greek letters all have their advocates.

4. Also, those favoring designations such as "cms" are not in unanimous agreement as to whether to use a capital letter or an Arabic numeral to distinguish one source of sterile cytoplasm from another. Popular usage favors the capital letter, such as "T"; however, many workers feel that numerals would provide a better permanent system.

5. The Southern Conference has taken formal action to adopt the designation "$\underline{cms}_{1,2}$, etc." for sterile cytoplasms, and "$\underline{Rf}_{1,2}$ etc." for restoring factors. This action is not considered to be irreversable, should the other conferences feel strongly that the proposed system is unsatisfactory.

In view of the above comments, it is recommended that the North Central Corn Breeding Technical Committee take action to adopt a system of designating factors for sterile cytoplasm and fertility restoration. The system adopted by the Southern Conference is suggested as the one which should be adopted.

E. R. Leng, Chairman

It was MOVED by J. H. Lonnquist that the North Central Corn Breeding Technical Committee adopt the terminology outlined in paragraph 5 of Dr. Leng's report.

Seconded by E. C. Rossman and passed.

Report of the Sub-committee on Maturity Ratings

The cooperative corn maturity studies were continued and tests were conducted at the following stations in 1955:

Fargo, North Dakota	St. Paul, Minnesota
Brookings, South Dakota	Spooner, Wisconsin
Eureka, South Dakota	Madison, Wisconsin
Waseca, Minnesota	East Lansing, Michigan

The 1955 corn growing season will be remembered as one of high temperatures, and in some areas, below normal rainfall. Some stations report 200 to 500 degree days above normal for the period from May 15th to October 1st.

Results and Observations

The total degree days required to mature a certain hybrid to 40 percent moisture at harvest continues to vary considerably for all stations.

Between stations there is very close agreement in the order that hybrids mature in relation to each other. This suggests that a hybrid could be given a uniform maturity rating between states.

Forty percent ear moisture seems to be a good figure to use in considering corn to have reached maturity. At this point there seems to be no further increase in gram weight per 1000 kernels and the shelling percent remains quite constant.

Degree day data to be obtained in the future should be reported at 40 percent ear moisture. This would make for better comparisons between stations.

Degree day data obtained by some stations from silking date to maturity indicates that the total degree days for this period remains nearly the same for all hybrid maturities.

Much interest has developed in maturity studies. Other factors such as length of day, light intensity, high temperature effect, etc. are being investigated. Maturity studies by the cooperators in the North Central Region should be continued.

E. H. Rinke
E. C. Rossman
William Wiidakas
A. M. Strommen, Chairman

In addition to the above summarized report Mr. Strommen distributed a mimeographed report with the detailed data on the tests at each station in 1955 and summaries of certain of the data obtained in tests during the 3-years, 1953, 1954 and 1955.

N. P. Neal mentioned that several workers in Europe and Canada also are cooperating in the studies on maturity ratings.

Chairman Jugenheimer appointed a nominating committee consisting of N. P. Neal as Chairman, G. F. Sprague and J. H. Lonnquist and instructed the committee to nominate two new members of the Executive Committee to replace G. H. Stringfield and himself as their terms now expire.

Discussion of the 1957 Meeting

It was MOVED by E. H. Rinke that the next meeting be held on the first Tuesday and Wednesday in March again at the Illini Center in the LaSalle Hotel.

Seconded by G. F. Sprague and passed.

with an expression of appreciation to the University of Illinois for the use of its facilities this year.

Registration of Inbred Lines

G. F. Sprague suggested that it would be desirable to prepare a handbook describing all of the inbred lines in use at the present time. These handbooks might be sold to defray the expenses for compiling them. He suggested that the Hybrid Seed Corn Division of the American Seed Trade Association might be approached on this project providing the American Society of Agronomy does not show interest in it.

It was MOVED by G. F. Sprague that we inform the Registration Committee of the American Society of Agronomy we are not interested in the registration of inbred lines as such but would like the American Society of Agronomy to prepare a handbook listing the inbred lines released with a complete description of each line.

Seconded and passed.

E. H. Rinke called attention to the new release policy in Minnesota which is quoted below:

"Inbred lines of corn developed by the University of Minnesota will be released to the public when they have been proven of superior combining ability for yield or other characters. Inbred lines of corn developed by others will not be released without their approval."

The release policies in use at the present time were discussed in some detail. A question was raised as to whether it might be possible to obtain information on the released inbred lines now being used in the commercial hybrid seed corn industry.

It was MOVED by E. C. Rossman that a committee be appointed to work out a questionnaire to get information on the use of station lines in the hybrid corn industry.

Seconded by Wm. R. Findley, Jr., and passed.

Meeting adjourned at 4:45 p. m.

MORNING SESSION, MARCH 7, 1956

The meeting was called to order by Chairman Jugenheimer at 9:05 a.m. The first item of business was the report of the Nominating Committee.

N. P. Neal, Chairman of the Nominating Committee reported that the Committee suggested L. H. Penny and C. O. Grogan as the two new members to the Executive Committee to serve for a period of four years.

It was MOVED that the nominations be closed and L. H. Penny and C. O. Grogan be declared elected.

Seconded and passed.

M.T. Jenkins was elected to continue as Secretary.

The regional uniform tests of single crosses and 3-way crosses for evaluating new inbred lines were discussed. The question was raised as to the possibility of summarizing the data from these tests earlier in the season in order to have the summarized data in the hands of the cooperators well ahead of planting.

G. F. Sprague raised the question as to the need for making the predictions from 3-way crosses. It was the general feeling of the group that these predictions are not needed and that they unnecessarily delay the report on the tests.

It was MOVED by J. H. Lonnquist that the Chairmen of the respective maturity committees prepare the summaries of the 3-way tests, mimeograph them and distribute them to cooperators. The summary tables then are to be included in the report of the meeting of the Technical Committee.

Seconded by G. F. Sprague and passed.

Report of the Sub-committee on Uniform Tests of the 100, 200 and 300 Maturity Series

The activities planned for 1956 comprise observation plantings of three new inbred lines, the production of all possible single crosses among nine inbred lines and two uniform tests of double crosses.

The plantings of inbred lines for observation are to be continued in 1956 with the following three new lines added:- MS206, CQ153 and CQ155.

Seed of all of the possible single crosses among the following nine lines will be produced for testing in 1957.

CM3	MS1334	CQ153
ND203	MS53	CQ155
A498	A90	B8

The following double crosses will be included in the uniform test to be conducted in 1956.

100-200 Maturity Series

AES101	(WD x ND203)x(V3 x W103)
MS160	(W49 x C103)x(H x MS206)
Min.164	(V3 x ND203)x(WD x A116)
AES201	(W33 x A116)x(A90 x ND203)
N107	(CMD5 x A498)x(A509 x A513)
CB2304	(CMD5 x W59M) x(A509 x MS1334)
CB2316	(CMD5 x W59M)x(A498 x A509)
CB2310	(CMD5 x A509)x(W59M x MS1334)
CB1329	(W33 x ND203)x(W79A x A90)
N132	(CMR5 x A509)x(W59M x A498)
W313	(M13 x R3) x W182B

Standards

W240	(W85 x W15)(W-D x W9)
ND301	(ND230 x ND203)(A111 x A90)

300 Maturity Series

M135 (A417 x A427) x (A509 x A556)
M136 (A427 x A556) x (A495 x A509)
W1681 (W79 x W182B) x (W297 x A498)
M150 (A90 x A116) x (A498 x MS1334)
N159 (CQ153 x CQ155) x (B8 x ND203)
CB4347 (W33 x ND203) x (A498 x A513)
CB4368 (W33 x A508) x (ND203 x A498)

Standards

W355 (W703 x W83)(W9 x W-M13)
MS250 (Oh51 x R53)(W10 x MS206)
Min. 608 (A334 x A340)(A357 x A392)

E. H. Rinke
A. M. Strommen
Wm. Wiidakas, Chairman

Report of the Sub-committee on Uniform Tests of the 400, 500 and 600 Maturity Series

All possible single crosses among 11 inbreds were tested at seven locations in 1955, Wisconsin, Missouri, Ohio, Indiana, Minnesota, Iowa and Michigan. Some crosses were short of seed so that some of the tests were incomplete. The inbreds were:

Oh431	
MS213	Ohio M15 (Oh51 x Oh26) x(A x W23)
MS214	Sprague's SSS received in 1944
A427	(CC36 x A405)
A430	(A131 x A230)
W56	(WM13 x W6)(WM13 x WR3) x Ia.817
W182D	(WD x W22)
W126	(Ill. 90 x US187-2)
W22R	Recovered W22
Mo.1864	(WF9 x M14)
Mo.1865	(WF9 x M14)

No seed was produced in 1955 for 1956 testing. A group of inbred lines will be grown in 1956 for observation and seed of 3-way crosses will be produced for testing in 1957. The following 4 single crosses were suggested for use as seed parents.

WF9 x M14
WF9 x Oh51A
W32 x W64A
R3 x W64A

The following double crosses were nominated to be included in the uniform tests of AES hybrid and candidates of 500-600 maturity in 1956:

500-600 Maturity Series

Mich. 53-173 (RM13 x MS78)(MS2A x MS1334)	400
Mich. 53-149 (WF9 x Oh51A)(MS75 x MS76)	500
Mich. 52-25 (WF9 x M14)(Oh51A x MS77)	500
CB4603 (A295 x W64A)(B14 x A297)	500-600
CB4621 (A295 x W64A)(B14 x A239)	500-600
Ill. 1863 (M14 x WF9)(I205 x Oh43)	600
Ind. 5409 (WF9 x W22)(M14 x B14)	600
Ia.4757 (WF9 x M14)(B16 x B21)	600
Ia.4779 (WF9 x M14)(Oh43 x Oh51A)	600

Standards

OhM15 (Oh26 x Oh51)(Ill.A x W23)
OhK24 (Oh51A x WF9)(Oh33 x Oh41B)
AES 510 (WF9 x W22)(H19 x B9)
AES 512 (WF9 x M14)(B9 x W22)
AES 610 (A73 x M14)(Oh43 x Oh51A)

Tests of the above hybrids were scheduled for Michigan, Illinois, Iowa, Ohio, Minnesota, Wisconsin, SouthDakota, Beltsville (blight), Indiana and Nebraska.

N. P. Neal
G. H. Stringfield
E. C. Rossman, Chairman
E. L. Pinnell, ex officio

Report of the Sub-committee on Uniform Tests of the 700 and 800 Maturity Series

No crosses of 700 maturity material were made for 1956 planting. Inbred lines selected for the 1956 tests of 800 maturity were crossed on WF9 x 38-11 by G. F. Sprague and on WF9 x Hy by J. H. Lonnquist. A total of 40 three-way crosses are available for testing. These are as follows:

Line and pedigree	Testcrossed to 'WF9 x 38-11'	Testcrossed to WF9 x Hy
38-11	..	x
K706 Kans. O.P. variety		
K756 do.	x	x
K757 do.	x	x
K758 do.	x	x
K759 do.	x	x
Mo.11090 (Miss. hyb. x M14^2)	x	x
Mo.11072 (Miss. hyb. x M14)	x	x
CI.30 (Os420 x NC34)-B-#^{4}	x	x
CI.32 (L317 x L97)-B-#^{3}	x	x
CI.42A(Hy x Mo21A)-B^3-#^{3}	x	x
B39 (SSS459)	x	x
B40 (SSS500)	x	x
L317	x	x
Tr-13634-17	x	x
Tr-13633-8	x	x
187-2-13657-6	x	x
Mo.940-13662	x	x
Hy-13706	x	..
Hy-13723-3	x	
Syn-I-13798 (Mo.21A x CI.14) x (Oh51A x Oh28)	x	x
38-11-13755-13	..	x
CI.38B (38-11 x NC34)-B-#^{2}-B-#^{3}	..	x

Five additional lines were nominated for inclusion in this group but testcross seed was inadequate and therefore can not be included.

The material listed above is being sent to Illinois, Indiana, Missouri, Kansas, Iowa, Nebraska, Kentucky, Ohio and Beltsville for planting in 1956.

Plans were made for the 1956 uniform tests of AES hybrids and candidates of 700 maturity which will be grown in Illinois, Indiana, Iowa, Missouri, Kansas, Ohio, Nebraska, Michigan and Beltsville (blight). The following hybrids were nominated for the 1956 test:

700 Maturity Series

Ill. 1555A (WF9 x Oh51A)(I224 x Oh28)
Ill. 1936 (Hy2 x WF9)(M14 x B14)
Ia.4009 (WF9 x M14)(B14 x B37)
Ia.4879 (WF9 x Oh43)(B14 x B37)
Ohio 4317 (WF9 x B14)(Oh28 x Oh43)
Nebr. 1924 (WF9 x Hy)(N6 x B14)

Standards

Ia. 4297 (WF9 x I205)(M14 x 187-2)
AES702 (WF9 x Hy2)(M14 x C103)

Plans were made for uniform tests of AES hybrids and candidates of 800 maturity in 1956 in Nebraska, Illinois, Indiana, Ohio, Kentucky, Kansas, Missouri, Iowa and Beltsville (blight). The following hybrids were nominated for the 1956 tests:

<u>800 Maturity Series</u>

Ind. 4656 (WF9 x P8)(Oh43 x H14)
Ind. 4655 (WF9 x P8)(Oh43 x C103)
Ind. 5655 (WF9 x *)(Oh45 x Oh07B) (* Recovered 38-11 to
Ill. 1880 (R103 x R104)(WF9 x 38-11) be given an Ind. No.)
Ill. 1913 (R151 x R154)(")
Ill. 1918 (R151 x R153)(")
Ia.4903 (WF9 x B7)(B14 x B38)
Ia. 4912 (WF9 x B14)(Hy x Oh41)
Mo.4060AW (N72 x Mo9187W)(K41 x H30) white

<u>Standards</u>

U.S. 13 (WF9 x 38-11)(Hy x L317)
AES801 (WF9 x B7)(B10 x B14)
AES802 (WF9 x Hy)(N6 x 38-11)
AES803 (WF9 x 187-2)(N6 x K148)
AES805 (WF9 x 38-11)(Oh45 x C103)
AES806 (WF9 x Hy)(N6 x N15)
AES807W (H26 x H27)(H28 x H29)
AES808 (WF9 x 38-11)(Oh43 x H14)

G. F. Sprague
R. W. Jugenheimer
J. H. Lonnquist, Chairman

Report of the Sub-committee on Uniform Tests of the 900 Maturity Series

1. AES hybrids and candidates

Results of the tests were summarized and presented for consideration by the Technical Committee. On the basis of 2 year's data Mo.810W (tested under the designation Mo8010W) was approved as AES904W. Illinois hybrids 1850 and 1852 were removed from the tests and the following hybrids and standards nominated for AES tests in 1956.

<u>900 Maturity Series</u>

Ill. 1851 (C103 x 38-11)(Oh7 x CI.21E)
Ill. 1889 (C103 x Oh45)(38-11 x Oh29)
Ill. 1893 (C103 x 38-11)(Oh7B x Oh29)
Ill. 1919 (WF9 x 38-11)(R130 x R156)
Mo.916 (Mo9108 x CI.21E)(Oh7B x Oh29)

Standards

Mo.804 (CI.7 x K4)(38-11 x CI.21E)
AES903W (H28 x K55)(H30 x K41)
AES904W (K64 x Mo22)(T111 x T115)
U.S.523W (K55 x K64)(Ky27 x Ky49)

Tests will be grown in:

Illinois	400 seeds	Kansas	300 seeds
Ohio	320 "	Iowa (corn borer)	100 "
Kentucky	400 "	Beltsville (blight)	100 "
Missouri	200 "		

2. Uniform tests of 3-way crosses.

Seed of yellow topcrosses on Mo.804 was produced by the Missouri Agricultural Experiment Station and white topcrosses on AES903W by the Kansas station. Fifteen lines are available for testing in the white group and 30 in the yellow series. States planning tests of this maturity series are: Illinois, Kansas, Kentucky, Missouri, Ohio and Virginia. The Ohio station will test only the white group. In addition the material will be planted in Iowa for corn borer ratings and at Beltsville, Maryland for blight evaluation.

Missouri will supply seed of the yellow topcrosses and Kansas seed of the white topcrosses. Each state conducting yield trials will receive 200 seeds and Iowa and Beltsville 50 seeds each.

Additional topcrosses on Mo.804 and AES903W will be made in 1956 for tests in 1957. The Missouri Agricultural Experiment Station will make seed of the yellow topcrosses and the Kansas Agricultural Experiment Station seed of the white topcrosses.

Wm. R. Findley, Jr., Chairman

Report of the Sub-committee on Cooperative Winter Nurseries

We believe that every corn breeding project in the North Central Region can be helped greatly by having more dependable facilities for winter breeding nurseries. For instance, the Ohio Station introduced a male sterilizing cytoplasm from the Texas Experiment Station in 1951. In 1954 nearly half of the Ohio- produced seed corn for over 2,000,000 acres of commercial crop, was produced on male-sterile seed plants. This would have been impossible without winter crops. Other States have made comparable progress by winter breeding work.

We appreciate the interest and active assistance the Experiment Station Directors and ARS officials are now giving winter nursery programs.

At present most North Central States have individual arrangements for winter corn nurseries in southern Florida. It would seem to be advantageous if some kind of Region-wide cooperative effort could be employed to set up permanent and dependable facilities available to all State and Federal corn research projects in the Region. This committee has at present no concrete suggestions as to how such a cooperative effort might be set up and operated.

However it seems to us that in order to establish a permanent winter nursery program it would be necessary to make a thorough on-the-spot investigation of the possibilities for working arrangements. Such arrangements might best be worked out with an established Florida or Federal Experiment Station in southern Florida.

There are however both private and cooperative agencies with whom several North Central States now arrange for winter crops on a custom basis. It might be possible for a regional and more permanent agreement with one of these agencies. This would have the important advantage of eliminating the necessity of year-by-year arrangements. It should have a stablizing influence on the winter crop programs.

We should like to know whether or not the Directors would consider a cooperative approach to this problem. If they would consider it the Technical Committee would then attempt to set up a detailed proposal for initiating and operating the program. This proposal would include a general statement covering the present expenditures involved in winter crops.

A. M. Strommen
E. H. Rinke
G. H. Stringfield, Chairman

It was MOVED by G. F. Sprague that the report be approved.

Seconded by E. C. Rossman and passed.

J. E. Newman reported on work carried on with thermal constants in connection with the Purdue University Agricultural Experiment Station corn yield tests during 1952, 1953 and 1954. He has been interested in the summation of heat units in connection with the maturity ratings of hybrids. Work was conducted at five locations in Indiana with U.S. 13 as the common tester at all locations.

G. H. Stringfield reported 1955 data on male sterility and pollen restorers in several Ohio inbred lines.

E. L. Pinnell reported on hybrid x population x fertility interaction in experiments with three population densities and three fertilizer levels in trials conducted in South Central and Southern Minnesota. The trials involved 5 double crosses planted at 3 locations in South Central Minnesota and 15 at 3 locations in Southern Minnesota.

R. W. Jugenheimer reported on breeding formechanical harvesting in Illinois. Tests have been conducted in Illinois in connection with this problem each year for the past 10 years. In connection with these tests they have used a two-row mounted picker on two-row plots. The object has been to find lines better adapted for mechanical harvesting and to determine some of the factors responsible for differences in suitability for harvesting. These differences involve time of harvesting, power requirements, disease resistance, insect resistance, etc.

Meeting adjourned at 12 noon.

MEETING OF THE EXECUTIVE COMMITTEE

A meeting of the Executive Committee was held immediately following adjournment of the general session. E. C. Rossman was elected Chairman for the ensuing year. Committee assignments were reviewed and the following changes approved:

A committee was appointed to collect information on the use of released inbred lines composed of M. T. Jenkins, Chairman; R. W. Jugenheimer, and J. H. Lonnquist.

E. L. Pinnell was appointed to act on the committee of the 400, 500 and 600 maturities. Wm. R. Findley, Jr., was designated to replace L. A. Tatum as Chairman on the Committee of the 900 maturity. Jack Bennett was designated to replace Earl Leng as Chairman of the Committee on Cytoplasmic Male Sterility.

OFFICERS AND SUB-COMMITTEE MEMBERSHIP, 1956

Administrative Advisor

N. J. Volk

Executive Committee

E. C. Rossman (1954 through 1957) Chairman
D. B. Shank (1954 through 1957)
L. H. Penny (1956 through 1959)
C. O. Grogan (1956 through 1959)
M. T. Jenkins, (1957) Secretary

Sub-Committee on Preservation of Germ Plasm

G. H. Stringfield, Chairman
E. H. Rinke
D. B. Shank

Sub-Committee on Grouping of Inbred Lines for Breeding Purposes

A. M. Brunson, Chairman
N. P. Neal
L. A. Tatum

Sub-Committee on Uniform Tests in the 100, 200 and 300 Maturity Series

William Wiidakas, Chairman
E. H. Rinke
A. M. Strommen

Sub-Committee on Uniform Tests in the 400, 500 and 600 Maturity Series

E. C. Rossman, Chairman
N. P. Neal
G. H. Stringfield
E. L. Pinnell

Sub-Committee on Uniform Tests in the 700 and 800 Maturity Series

J. H. Lonnquist, Chairman
R. W. Jugenheimer
G. F. Sprague

Sub-Committee on Uniform Tests in the 900 Maturity Series

Wm. R. Findley, Jr., Chairman
M. S. Zuber

Sub-Committee on Cytoplasmic Male Sterility

Jack Beckett, Chairman
J. H. Lonnquist
W. A. Russell

Sub-Committee on Maturity Ratings

A. M. Strommen, Chairman
E. H. Rinke
E. C. Rossman
William Wiidakas

Sub-Committee on Cooperative Winter Nurseries

G. H. Stringfield, Chairman
E. H. Rinke
A. M. Strommen

Sub-Committee on the Use of Station Lines in the Hybrid Corn Industry

M. T. Jenkins, Chairman
R. W. Jugenheimer
J. H. Lonnquist